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ABSTRACT

The relationship of middle school climate to academic achievement was examined. Participants were members of eight 6th grade classes. Four of the classes were in elementary settings, and four in middle school settings. Classes were matched as closely as possible on economic status and ethnic composition. Entered into correlational analyses were the mathematics, reading, and overall scores on the California Test of Basic Skills, and school climate perception scores in the areas of satisfaction, cohesiveness, friction, difficulty, and competition as measured by the School Climate Inventory Instrument. Findings revealed that elementary and middle school students perceived school climate at essentially the same levels. Middle school students' perceptions of cohesiveness and mathematics, perceptions of reading and satisfaction, and total battery scores and cohesiveness were significantly and positively correlated. Since many correlation coefficients were tested and only three were significant, it was concluded that there were no linear relationships between students' perceptions of school climate and academic achievement. Differences on the scales of cohesiveness and satisfaction indicated that the middle school climate was more positive than that of elementary schools. Recommendations based on the findings are offered. (RH)

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PERCEPTIONS OF SCHOOL CLIMATE AND STUDENT ACHIEVEMENT IN MIDDLE AND ELEMENTARY SCHOOL

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A primary goal of education and educational researchers has been to determine the conditions for effective learning in the classroom. With the recent decline in achievement test scores, a reemphasis on basic skills a movement toward competency-based education has been noted. Alternatives to academic achievement have also been suggested as legitimate educational outcomes for students: socialization of the whole child (Wynne, 1972), humanistic quality of school life. and the development of an adequate self-concept (Wang and Stile 1986). While there have been many alternative goals suggested, it seems academic achievement and learning achievement remain of ultimate concern. School climate, defined as the norms, beliefs, and attitudes reflected in the conditions, events and practices of a particular environment (Kelley, 1980), is one area of research in which attempts have been made to establish a relationship between it and student achievement. In a summary of indicators of effective teaching practices, Wang (1990) identifies school climate and its variables as critical to the teaching and learning process. Research at the elementary and middle school levels has indicated a positive relationship between learning and certain components of school climate (Agnew, 1982; Ashton, et al, 1982; Moreland Recognition Report, 1984; Dignan and Schelkun, 1988). Chavez (1984) conducted a study with bilingual and non-bilingual students. Chavez related climate scores on a modified version of the My Class Inventory with reading and math scores on the California Test of Basic Skills. Chavez indicated positive relationships between the scales of satisfaction and competition and California Test of Basic Skills achievement scores. That is, bilingual children in bilingual classrooms achieved at higher levels in math and reading when perceptions of satisfaction.

Other studies in the area of climate and academic achievement have established relationships between student outcomes and perceptions of school climate. Anderson, Walberg and Welch (1969) found a stronger relationship between achievement scores and female students than for male students and academic achievement. O'Reilly (1975) found significant relationships between climate scales of competitiveness, cliqueness, cohesiveness, and satisfaction and mathematics achievement. A survey of exemplary middle schools, as defined by the Study of Well-Developed Schools by Phi Delta Kappa, correlated learning climate with student behavior and achievement. In the survey, George and Oldaker (1986) noted improved student behavior, greater school attendance and higher levels of achievement in those schools reporting a positive learning climate.

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Projects focusing on school climate improvement often note favorable changes in student behavior (Dumaresq and Blust, 1984; Kleese and Biernat, 1989), perceptions of school, student interactions, and achievement (Licata, 1987). A report by the National Association of Secondary School Principals indicates a link between learning environment and motivation. The conclusion drawn is that a positive learning environment will result in greater motivation and less failure in school (NASSP, 1987).

This study examines the relationship of school climate to academic achievement in the middle school setting. The study focuses on the areas of math, reading, and overall scores on the California Test of Basic Skills (CTBS) and their correlation to the school climate scales of satisfaction, cohesiveness, friction, difficulty, and competition as measured on the School Climate Inventory Instrument (SCI).

DESCRIPTION OF INSTRUMENTS

The question of whether or not a learning environment can be adequately assessed is one whose answer has evolved through several stages. Murray (1938) first conceptualized the dual process of personal needs and environmental press. Pace and Stern (1958) extended the concept of environmental press to include "perceived climate...the study of the atmosphere of colleges and universities" (p.88). These were followed by the development of the Evening College Characteristics Index (Pace and Stern, 1961). From these beginnings other climate measures were developed. Sinclair (1969) devised the Elementary School Environmental Survey . Next came the Classroom Environment Scale (1970) which was found to be reliable in measuring several different types of interaction that occur within a classroom (Trickett and Moos, 1970). The aforementioned instruments are only a few of the many that have been developed. Other useful tools are for example: Halpin and Croft's, Organizational Climate Descriptive Questionnaire (1963) in which the organizational climate of elementary schools is described through the self-reports of teachers and principals. Classroom Activities which measured the frequency of affective and cognitive activities in the classroom; a measure of "open education across different cultures" (Thomas, 1974).

A study of reports that analyzed middle school teacher team meetings using a coding system adapted from Flander's work on interaction analysis concludes with a tool for validating perceptions of school climate (Feirsen, 1987).

In summary, the above mentioned measures provide an indicator of the measures developed thus far that have attempted to assess the characteristics and impacts of the environments of classrooms. The Learning Environment Inventory (Walberg, 1968) and the My Class Inventory (Anderson, 1971) have both been widely

used and have proved to be both simple and convenient to use. Both instruments lend themselves to machine scoring, and since neither instrument mentions the classroom teacher, they are non-threatening to teachers. Additionally, it is possible to include as many or as few of the the scales as appropriate to the focus of a particular research problem.

In summary, research regarding school climate has developed from the study of a child's interaction with its environment, to the stage in which high-inference instruments are not available for measuring an array of variables which are felt to comprise school climate. The LEI and the MCI, in particular were discussed to illustrate the flexibility of these instruments in measuring climate variables.

The School Climate Inventory Instrument (SCI), as devised by the researchers, is a slightly modified version of Anderson's MCI. In order to maintain internal consistency of the instruments, the statements on the School Climate Inventory reflect the same statements used by Anderson. The statements were reworded to reflect "school climate" and since sixth graders in the sample have had experience with computer response sheets, the Likert scale, was instituted in conjunction with a computer response sheet to indicate responses. The School Climate Inventory is three pages in length and has three sections. The first section of the SCI gathers demographic data; the second consists of instructions, followed by 38 statements which are arranged in the instrument to prevent consecutive repetition of statements relating to the same climate scale.

In order the identify the population that participated in this study, the researchers selected a sample of twenty (20) sixth grade classrooms. One half (ten) of those classroom were in middle school setting and one half in elementary K-6 settings. Efforts were made to match the elementary and middle school samples with regard to economic status and ethnic makeup as closely as possible, demographic data regarding the classrooms were examined. As a result, four (4) elementary classrooms and four (4) middle school classrooms were identified for participation in the study.

Scores gathered included School Climate perceptions scores as measured by the School Climate Inventory Instrument (SCI) and achievement scores in the areas of math, reading, and overall scores as measured by the CTBS. Demographic data regarding gender and ethnicity were also collected. Demographic data was also collected from teachers. School climate perception scores were also gathered from teachers.

TREATMENT OF DATA

1. Means were calculated for each of the scales on the SCI for each of the populations, elementary and middle school.

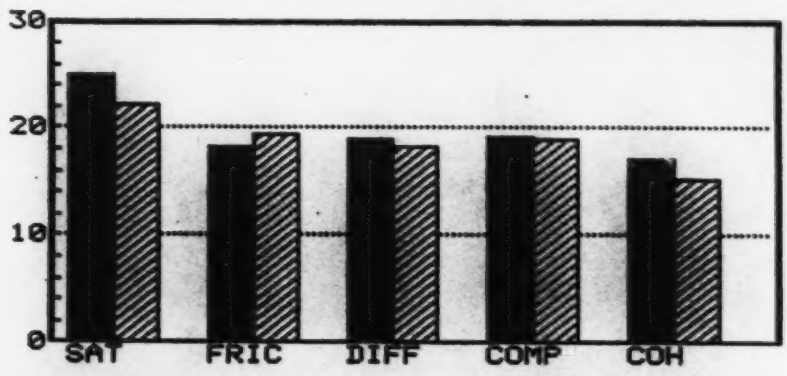
2. Pearson's Correlations Coefficient, $\bar{r}$, was used to determine is any linear relationships existed between school climate perception means and CTBS achievement scores.

3. Chi-Square Test for Homogeneity was used to test differences and similarities among the population.

SCHOOL CLIMATE MEANS
FOR
MIDDLE SCHOOL STUDENTS AND ELEMENTARY SCHOOL STUDENTS

	MIDDLE SCHOOL	ELEMENTARY SCHOOL
Satisfaction	24.92	22.26
Friction	18.28	19.42
Difficulty	19.06	18.35
Competition	19.11	19.01
Cohesiveness	17.14	15.29

SCHOOL CLIMATE MEANS



SAT- SATISFACTION FRIC-FRICTION

DIFF-DIFFICULTY COMP-COMPETITION

COH-COHESIVENESS

CORRELATION COEFFICIENTS FOR SCHOOL CLIMATE PERCEPTIONS AND CALIFORNIA TEST OF BASIC SKILLS

READING SCORES AND MIDDLE SCHOOL AND ELEMENTARY SCHOOL STUDENTS

	MIDDLE SCHOOL	ELEMENTARY SCHOOL
Satisfaction	0.778*	0.247
Friction	0.116	0.011
Difficulty	0.031	0.020
Competition	0.095	0.133
Cohesiveness	0.254	0.456

MATH SCORES AND MIDDLE SCHOOL AND ELEMENTARY SCHOOL STUDENTS

	MIDDLE SCHOOL	ELEMENTARY SCHOOL
Satisfaction	0.130	0.251
Friction	0.211	0.064
Difficulty	0.108	0.030
Competition	0.173	0.193
Cohesiveness	0.784*	0.270

TOTAL BATTERY SCORES AND MIDDLE SCHOOL AND ELEMENTARY SCHOOLS

	MIDDLE SCHOOL	ELEMENTARY SCHOOL
Satisfaction	0.687*	0.158
Friction	0.301	0.119
Difficulty	0.096	0.115
Competition	0.004	0.071
Cohesiveness	0.552*	0.078

*significant correlations p.05

FINDINGS AND RECOMMENDATIONS.

Analyses on school climate perceptions yielded the following data:

1. Similar perceptions were found to be held between elementary and middle school sixth grade students. Overall, the differences found in mean scores were not significant. However, the differences on the scales of cohesiveness and satisfaction seemed to indicate a trend toward a more positive school climate held by middle school students.

Of the many correlation coefficients tested, three correlations coefficients were significant and positive.

2. Middle school students' perceptions of cohesiveness and math, perceptions of reading and satisfaction, and total battery scores and cohesiveness were positively correlated. Other climate scales of friction, competitiveness, and difficulty did not appear to be positively nor significantly correlated to achievement scores for either elementary or middle school students.

3. Because many cells fell below five, the Chi-Square Test for Homogeneity proved invalid for this data.

SUMMARY

The data revealed that elementary and middle school students perceived school climate at essentially the same levels. Since many correlations coefficients were tested and only three were significant, it was concluded no linear relationships existed between school climate perceptions and achievement. However, the middle school setting appears to foster higher perceptions of satisfaction and cohesiveness in students than do elementary settings.

RECOMMENDATIONS

Based on the findings and conclusions, the researchers offer the following recommendations:

1. It is recommended that elementary and middle school climates be designed to foster cohesiveness among students. Collaborative strategies may be a strategy that should be examined for implementation. Student government activities may also be a useful strategy.

2. It is recommended that the middle school setting be carefully considered since it appears that sixth grade students in the middle school organizations held more positive perceptions of satisfaction with their schools and cohesiveness among the students.

3. It is recommended that researchers examine school organization, middle schools, junior high schools, middle schools, and elementary schools in an effort to relate students achievement to perceptions of school climate when in these types of organizations.

4. Finally, it is recommended that collaborative strategies be closely examined as a means of achieving positive perceptions of school climate and increased student achievement.

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